

AMENDMENTS TO THE CLAIMS

Without prejudice, please cancel claims 1-14 and add new claims 15-27,
so that the claims read as follows:

1. – 14. (Cancelled).

15. (New) A silica compounded rubber composition for a tire, the composition comprising 100 parts by weight of a rubber component including from 20 to 80% by weight of (a) and 80 to 20% by weight of (b), wherein (a) comprises a vinyl-cis-polybutadiene rubber composition containing 1,2-polybutadiene having a melting point of 170°C or higher, a cis-polybutadiene rubber, and a first substance having at least one unsaturated double bond per repeating unit and comprising at least one member selected from the group consisting of polyisoprene, crystalline polybutadiene having a melting point of not higher than 150°C, liquid polybutadiene, and derivatives thereof, and wherein (b) comprises a diene-based rubber other than (a); and wherein the rubber composition further includes 40 to 100 parts by weight of (c), which comprises a rubber reinforcing agent containing 40 % or more of silica,

wherein the vinyl-cis-polybutadiene rubber composition (a) is produced by a process for producing a vinyl-cis-polybutadiene rubber composition by subjecting 1,3-butadiene to cis-1,4-polymerization in a hydrocarbon-based solvent by using a cis-1,4-polymerization catalyst to provide a resulting polymerization reaction mixture, subsequently making a 1,2-polymerization catalyst copresent in the resulting polymerization reaction mixture to subject 1,3-butadiene to 1,2-polymerization, thereby forming 1,2-polybutadiene having a melting point of 170°C or higher, and then separating, recovering and obtaining the vinyl-cis-polybutadiene rubber composition as formed, wherein the process for producing the vinyl-cis-polybutadiene rubber comprises a step of adding the first substance during the production of the vinyl-cis-polybutadiene rubber, and

wherein the 1,2-polybutadiene is in a short crystalline fiber form in which a minor axis average length of monodispersed fiber crystals is not more than 0.2 μm , an aspect ratio is not more than 10, and a number of average monodispersed fiber crystals is 10 or more per 400 μm^2 .

16. (New) The rubber composition according to claim 15, wherein in the production of the vinyl-cis-polybutadiene rubber composition (a), the first substance is added in a range of from 0.01 to 50 % by mass based on a total sum of the crystalline fibers of 1,2-polybutadiene and the cis-polybutadiene rubber.

17. (New) The rubber composition according to claim 15, wherein the 1,2-polybutadiene in short crystalline fiber form in the vinyl-cis-polybutadiene rubber composition (a) is (I) dispersed in the cis-polybutadiene rubber without being contained in particles of the first substance, wherein the cis-polybutadiene rubber is a matrix for the 1,2-polybutadiene, and wherein a major axis length of the short crystalline fibers dispersed in the matrix is in a range of from 0.2 to 1,000 μm , or II) dispersed in the particles of the first substance, wherein the major axis length of the short crystalline fibers dispersed in the particles of the first substance is in a range of from 0.01 to 0.5 μm .

18. (New) The rubber composition according to claim 15, wherein the vinyl-cis-polybutadiene rubber composition (a) has the following characteristics:

(1) the cis-polybutadiene rubber is a matrix component of the vinyl-cis-polybutadiene rubber composition and has a Mooney viscosity in a range of from 10 to 50;

(2) the cis-polybutadiene rubber has a viscosity in a toluene solution at 25 °C in a range of from 10 to 150 centipoises;

(3) the cis-polybutadiene rubber is the matrix component of said vinyl-cis-polybutadiene rubber composition and has an $[\eta]$ in the range of from 1.0 to 5.0;

(4) the cis-polybutadiene rubber has a 1,4-cis-structure content in a range of 80 % or more;

(5) the 1,2-polybutadiene and the first substance are dispersed in a physically and/or chemically adsorbed state in the cis-polybutadiene rubber which is the matrix component of the vinyl-cis-polybutadiene rubber composition; and

(6) the high-molecular substance in the vinyl-cis-polybutadiene rubber composition is a boiling n-hexane insoluble matter.

19. (New) The rubber composition according to claim 15, wherein the diene-based rubber (b) other than (a) is a natural rubber and/or polyisoprene and/or a styrene-butadiene rubber.

20. (New) A rubber composition for a tire sidewall, the composition comprising 100 parts by weight of a rubber component including from 20 to 80% by weight of (a) and 80 to 20% by weight of (b), wherein (a) comprises a vinyl-cis-polybutadiene rubber composition containing 1,2-polybutadiene having a melting point of 170 °C or higher, a cis-polybutadiene rubber, and a first substance having at least one unsaturated double bond per repeating unit and comprising at least one member selected from the group consisting of polyisoprene, crystalline polybutadiene having a melting point of not higher than 150 °C, liquid polybutadiene, and derivatives thereof, and wherein (b) comprises a diene-based rubber other than (a); and wherein the rubber composition further includes 25 to 60 parts by weight of (c), which comprises a rubber reinforcing agent,

wherein the vinyl-cis-polybutadiene rubber composition (a) is produced by a process for producing a vinyl-cis-polybutadiene rubber composition by subjecting 1,3-butadiene to cis-1,4-polymerization in a hydrocarbon-based solvent by using a cis-1,4-polymerization catalyst to provide a resulting polymerization reaction mixture, subsequently making a 1,2-polymerization catalyst copresent in the resulting polymerization reaction mixture to subject 1,3-butadiene to 1,2-polymerization, thereby forming 1,2-polybutadiene having a melting point of 170 °C or higher, and then separating, recovering and obtaining the vinyl-cis-polybutadiene rubber composition as formed, wherein the process for producing the vinyl-cis-polybutadiene comprises a step of adding the first substance during the production of the vinyl-cis-polybutadiene rubber, and

wherein the 1,2-polybutadiene is in a short crystalline fiber form in which a minor axis average length of monodispersed fiber crystals is not more than 0.2 μm , an aspect ratio is not more than 10, and a number of average monodispersed fiber crystals is 10 or more per 400 μm^2 .

21. (New) The rubber composition according to claim 20, wherein the diene-based rubber (b) other than (a) is a natural rubber and/or polyisoprene.

22. (New) The rubber composition according to claim 20, wherein the rubber reinforcing agent is carbon black.

23. (New) A rubber composition for a passenger automobile tire, the composition comprising 100 parts by weight of a rubber component including from 10 to 50% by weight of (a), 0 to 60% by weight of (b), and 30 to 70% by weight of (e), wherein (a) comprises a vinyl-cis-polybutadiene rubber composition containing 1,2-polybutadiene having a melting point of 170 °C or higher, a cis-polybutadiene rubber, and a first substance having at least one unsaturated double bond per repeating unit and comprising at least one member selected from the group consisting of polyisoprene, crystalline polybutadiene having a melting point of not higher than 150 °C, liquid polybutadiene, and derivatives thereof, and wherein (e) comprises a styrene-butadiene rubber and (b) comprises a diene-based rubber other than (a) and (e); and wherein the rubber composition further comprises 40 to 100 parts by weight of (d), which comprises a rubber reinforcing agent,

wherein the vinyl-cis-polybutadiene rubber composition (a) is produced by a process for producing a vinyl-cis-polybutadiene rubber composition by subjecting 1,3-butadiene to cis-1,4-polymerization in a hydrocarbon-based solvent by using a cis-1,4-polymerization catalyst to provide a resulting polymerization reaction mixture, subsequently making a 1,2-polymerization catalyst copresent in the resulting polymerization reaction mixture to subject 1,3-butadiene to 1,2-polymerization, thereby forming 1,2-polybutadiene having a melting point of 170 °C or higher, and then separating, recovering and obtaining the vinyl-cis-polybutadiene rubber composition as formed, wherein the process for producing the vinyl-cis-polybutadiene rubber

comprises a step for adding the first substance during the production of the vinyl-cis-polybutadiene rubber, and

wherein the 1,2-polybutadiene is in a short crystalline fiber form in which a minor axis average length of monodispersed fiber crystals is not more than 0.2 μm , an aspect ratio is not more than 10, and a number of average monodispersed fiber crystals is 10 or more per 400 μm^2 .

24. (New) A rubber composition for a large-sized vehicle tire, the composition comprising 100 parts by weight of a rubber component including from 10 to 60% by weight of (a) and 90 to 40% by weight of (b), wherein (a) comprises a vinyl-cis-polybutadiene rubber composition containing 1,2-polybutadiene having a melting point of 170 °C or higher, a cis-polybutadiene rubber, and a first substance having at least one unsaturated double bond per repeating unit and comprising at least one member selected from the group consisting of polyisoprene, crystalline polybutadiene having a melting point of not higher than 150 °C, liquid polybutadiene, and derivatives thereof, and wherein (b) comprises a diene-based rubber other than (a); and wherein the rubber composition further includes 45 to 70 parts by weight of (c), which comprises a rubber reinforcing agent,

wherein the vinyl-cis-polybutadiene rubber composition (a) is produced by a process for producing a vinyl-cis-polybutadiene rubber composition by subjecting 1,3-butadiene to cis-1,4-polymerization in a hydrocarbon-based solvent by using a cis-1,4-polymerization catalyst to provide a resulting polymerization reaction mixture, subsequently making a 1,2-polymerization catalyst copresent in the resulting polymerization reaction mixture to subject 1,3-butadiene to 1,2-polymerization, thereby forming 1,2-polybutadiene having a melting point of 170 °C or higher, and then separating, recovering and obtaining the vinyl-cis-polybutadiene rubber composition as formed, wherein the process for producing the vinyl-cis-polybutadiene rubber comprises a step of adding the first substance during the production of the vinyl-cis-polybutadiene rubber, and

wherein the 1,2-polybutadiene is in a short crystalline fiber form in which a minor axis average length of monodispersed fiber crystals is not more than 0.2 μm , an aspect ratio is not more than 10, and a number of average monodispersed fiber crystals is 10 or more per 400 μm^2 .

25. (New) A high-hardness compounded rubber composition, comprising 100 parts by weight of a rubber component including from 20 to 80% by weight of (a) and 80 to 20% by weight of (b), wherein (a) comprises a vinyl-cis-polybutadiene rubber composition containing 1,2-polybutadiene having a melting point of 170°C or higher, a cis-polybutadiene rubber, and a first substance having at least one unsaturated double bond per repeating unit and comprising at least one member selected from the group consisting of polyisoprene, crystalline polybutadiene having a melting point of not higher than 150°C, liquid polybutadiene, and derivatives thereof, and wherein (b) comprises a diene-based rubber other than (a); and wherein the rubber composition further includes 60 to 100 parts by weight of (c), which comprises a rubber reinforcing agent,

wherein the vinyl-cis-polybutadiene rubber composition (a) is produced by a process for producing a vinyl-cis-polybutadiene rubber composition by subjecting 1,3-butadiene to cis-1,4-polymerization in a hydrocarbon-based solvent by using a cis-1,4-polymerization catalyst, to provide a resulting polymerization reaction mixture, subsequently making a 1,2-polymerization catalyst copresent in the resulting polymerization reaction mixture to subject 1,3-butadiene to 1,2-polymerization, thereby forming 1,2-polybutadiene having a melting point of 170°C or higher, and then separating, recovering and obtaining the vinyl-cis-polybutadiene rubber composition as formed, wherein the process for producing the vinyl-cis-polybutadiene rubber comprises a step for adding the first substance during the production of the vinyl-cis-polybutadiene rubber, and

wherein the 1,2-polybutadiene is in a short crystalline fiber form in which a minor axis average length of monodispersed fiber crystals is not more than 0.2 μm , an aspect ratio is not more than 10, and a number of average monodispersed fiber crystals is 10 or more per 400 μm^2 .

26. (New) A rubber composition for a tire base tread, the composition comprising 100 parts by weight of a rubber component including from 20 to 80% by weight of (a) and 80 to 20% by weight of (b), wherein (a) comprises a vinyl-cis-polybutadiene rubber composition containing 1,2-polybutadiene having a melting point of 170 °C or higher, a cis-polybutadiene rubber, and a first substance having at least one unsaturated double bond per repeating unit and comprising at least one member selected from the group consisting of polyisoprene, crystalline polybutadiene having a melting point of not higher than 150°C, liquid polybutadiene, and derivatives thereof, and wherein (b) comprises a diene-based rubber other than (a); and wherein the rubber composition further includes 22 to 55 parts by weight of (c), which comprises a rubber reinforcing agent,

wherein the vinyl-cis-polybutadiene rubber composition (a) is produced by a process for producing a vinyl-cis-polybutadiene rubber composition by subjecting 1,3-butadiene to cis-1,4-polymerization in a hydrocarbon-based solvent by using a cis-1,4-polymerization catalyst to provide a resulting polymerization reaction mixture, subsequently making a 1,2-polymerization catalyst copresent in the resulting polymerization reaction mixture to subject 1,3-butadiene to 1,2-polymerization, thereby forming 1,2-polybutadiene having a melting point of 170°C or higher, and then separating, recovering and obtaining the vinyl-cis-polybutadiene rubber composition as formed from the resulting polymerization reaction mixture, wherein the process for producing the vinyl-cis-polybutadiene rubber comprises a step of adding the first substance during the production of the vinyl-cis-polybutadiene rubber, and

wherein the 1,2-polybutadiene is in a short crystalline fiber form in which a minor axis average length of monodispersed fiber crystals is not more than 0.2 μm , an aspect ratio is not more than 10, and a number of average monodispersed fiber crystals is 10 or more per 400 μm^2 .

27. (New) A rubber composition for a tire cord coating, the composition comprising 100 parts by weight of a rubber component including from 10 to 60% by weight of (a) and 90 to 40% by weight of (b), wherein (a) comprises a vinyl-cis-polybutadiene rubber composition containing 1,2-polybutadiene having a melting point of 170°C or higher, a cis-

polybutadiene rubber, and a first substance having at least one unsaturated double bond per repeating unit and comprising at least one member selected from the group consisting of polyisoprene, crystalline polybutadiene having a melting point of not higher than 150°C, liquid polybutadiene, and derivatives thereof, and wherein (b) comprises a diene-based rubber other than (a); and wherein the rubber composition further includes 30 to 80 parts by weight of (c), which comprises a rubber reinforcing agent,

wherein the vinyl-cis-polybutadiene rubber composition (a) is produced by a process for producing a vinyl-cis-polybutadiene rubber composition by subjecting 1,3-butadiene to cis-1,4-polymerization in a hydrocarbon-based solvent by using a cis-1,4-polymerization catalyst to provide a resulting polymerization reaction mixture, subsequently making a 1,2-polymerization catalyst copresent in the resulting polymerization reaction mixture to subject 1,3-butadiene to 1,2-polymerization, thereby forming 1,2-polybutadiene having a melting point of 170 °C or higher, and then separating, recovering and obtaining the vinyl-cis-polybutadiene rubber composition as formed from the resulting polymerization reaction mixture, wherein the process for producing the vinyl-cis-polybutadiene rubber comprises a step of adding the first substance during the production of the vinyl-cis-polybutadiene rubber, and

wherein the 1,2-polybutadiene is in a short crystalline fiber form in which a minor axis average length of monodispersed fiber crystals is not more than 0.2 μm , an aspect ratio is not more than 10, and a number of average monodispersed fiber crystals is 10 or more per 400 μm^2 .